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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Moungi G. Bawendi *et al.*	Art Unit	: 1641
Serial No.	: 09/160,454	Examiner	: M. Pham
Filed	: September 24, 1998		
Title	: BIOLOGICAL APPLICATIONS OF QUANTUM DOTS		

BOX AF
Commissioner for Patents
Washington, D.C. 20231

OK to enter 11/8/00

RESPONSE TO OFFICE ACTION MAILED JULY 31, 2000

In response to the action mailed July 31, 2000, Applicants submit the following remarks. Please amend the application as follows:

In the Specification:

Replace page 12, lines 1-30 with

--as hexane or pyridine. It is preferred that the QDs are water-soluble and associated with molecules capable of interacting with biological compounds. However, alternative methods of associating molecules to QDs may be used to obtain similar results. Bawendi et al. have described methods for construction of water-soluble QDs suitable for biological systems (US Patent Application entitled "Water-Soluble Luminescent Nanocrystals" incorporated herein by reference and filed on September 18, 1998).

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A water-solubilizing layer is found at the outer surface of the overcoating layer. The outer layer includes a compound having at least one linking group for attachment of the compound to the overcoating layer and at least one hydrophilic group spaced apart from the linking group by a hydrophobic region sufficient to prevent electron charge transfer across the hydrophobic region. The affinity for the nanocrystal surface promotes coordination of the linking moiety to the quantum dot outer surface and the moiety with affinity for the aqueous medium stabilizes the quantum dot suspension.

Without limitation to the scope of the present invention, the compound may have the formula, $H_2X((CH_2)_nCO_2H)_y$ and salts thereof, where X is S, N, P or O=P; $n \geq 6$; and z and y are selected to satisfy the valence requirements of X.

Exemplary compound for use in the invention may have the formula,